(12) INTERNATIONAL [redacted]ICATION PUBLISHED UNDER THE PATENT C[redacted]ERATION TREATY (PCT)

529437

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
8 April 2004 (08.04.2004)

PCT

(10) International Publication Number
WO 2004/030166 A1

(51) International Patent Classification[7]: H01S 3/08, 5/14

(21) International Application Number:
PCT/EP2002/010712

(22) International Filing Date:
25 September 2002 (25.09.2002)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant *(for all designated States except US)*: AGILENT TECHNOLOGIES, INC. [US/US]; 395 Page Mill Road, Palo Alto, CA 94306 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: STEFFENS, Wolf [DE/DE]; Schwarzwaldstrasse 84, 71083 Herrenberg (DE). SCHMIDT, Andreas [DE/DE]; Quenstedtstrasse 14, 72076 Tuebingen (DE). HEITKAMP, Jens [DE/DE]; Belchenstrasse 40, 71126 Gaeufelden (DE). HABERLAND, Udo [DE/DE]; Kniebisstrasse 8, 71088 Holzgerlingen (DE).

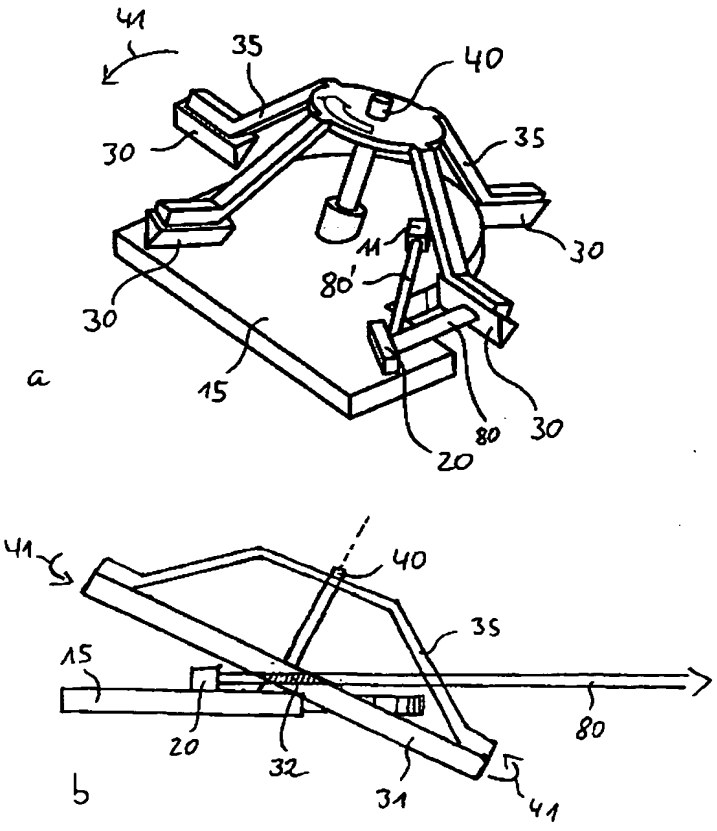
(74) Agent: BARTH, Daniel; Agilent Technologies Deutschland GmbH, Herrenbergerstrasse 130, 71034 Boeblingen (DE).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,

[Continued on next page]

(54) Title: WAVELENGTH TUNABLE CAVITY WITH ROTATIONAL MOVEMENT



(57) Abstract: A wavelength tunable cavity comprises a first cavity end mirror (10) serving to at least . partially reflect an incident beam (80) of electromagnetic radiation towards a second cavity end mirror (30), said at least one second cavity end mirror (30) serving to at least partially reflect an incident beam (80) of electromagnetic radiation back towards said first cavity end mirror (10), both mirrors (10,30) providing the formation of resonance modes of said electromagnetic radiation within said cavity, wherein an optical path of said beam (80) within said cavity is defined in length by said first (10) and second cavity end mirror (30), a grating (20), which is arranged within said optical path of said beam (80) being reflected by said first cavity end mirror (10), said grating (20) being adapted for tuning the wavelength of said beam (80), wherein said at least one second cavity end mirror (30) is arranged being rotatable about an axis (40) by at least 360 degrees for providing a continuous movement (41) of said second cavity end mirror (30) along a circle path with respect to said grating (20), said circle path of said second cavity end mirror (30) comprising at least a portion (32) being arranged to intersect with said beam (80), which is redirected by said grating (20).

WO 2004/030166 A1

ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*